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     (FILE 'HOME' ENTERED AT 15:27:35 ON 04 OCT 2005)

     FILE 'CAPLUS' ENTERED AT 15:27:49 ON 04 OCT 2005
                E YVIN JEAN/IN,AU
L1           62 S E2-6
                E JAMOIS FRANK/IN,AU
L2            6 S E3-4
                E VETVICKA VACLAV/IN,AU
L3          103 S E2-4
L4          158 S L1 OR L2 OR L3
L5        37090 S LAMINAR?
L6        14419 S GLUCAN
L7        50189 S OLIGOSACCHARIDE
L8        26217 S OLIGO
L9           26 S L4 AND (L5 OR (L6 AND (L7 OR L8)))
L10      267567 S CANCER
L11      394259 S TUMOR
L12       68667 S CHEMOTHER?
L13           5 S L9 AND (L10 OR L11 OR L12)
L14          21 S L9 NOT L13
L15          35 S L4 AND (L5 OR L6)
L16           9 S L15 NOT L9
L17           5 S L16 AND (L10 OR L11 OR L12)
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L13 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:394530 CAPLUS
DOCUMENT NUMBER: 142:423818
TITLE: Therapeutical combination against **cancer** comprising a monoclonal antibody with a **glucan**
INVENTOR(S): **Yvin, Jean-Claude**; Panak, Edouard; **Vetvicka, Vaclav**
PATENT ASSIGNEE(S): Fr.
SOURCE: U.S. Pat. Appl. Publ., 6 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005095250	A1	20050505	US 2003-698034	20031030
WO 2005049044	A1	20050602	WO 2004-EP13119	20041029

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-698034 A 20031030

AB The present invention relates to compns. and methods for treating humans and warm-blood animals suffering from **cancer**. More particularly, a therapeutical treatment in which a monoclonal antibody is administered with either β-(1,3)- **glucan** like **laminarin** or an **oligo**-β-(1,3)- **glucan** and a pharmaceutically acceptable carrier, to patients suffering from **cancer** are described. Female nude mice were implanted s.c. with human breast carcinoma cell line. Mice were injected i.p. with combination of Phycarine 500 mg/kg, once a day for 5 days and Herceptin 0.5 mg/kg, twice a week during 3 wk. The combined administration of Phycarine and Herceptin allowed a limitation in the increase of the **tumor** weight which was far higher than the mean value obtained when administering Herceptin or Phycarine alone; said activity on the **tumor** weight being even equivalent to the one obtained when administering a conventional dosage of taxol.

L13 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:259652 CAPLUS
DOCUMENT NUMBER: 142:309889
TITLE: Therapeutical treatment with **oligo**-beta-(1,3) -**glucans**, drugs used in said treatment
INVENTOR(S): **Yvin, Jean-Claude**; **Jamois, Frank**; **Vetvicka, Vaclav**
PATENT ASSIGNEE(S): Fr.
SOURCE: U.S. Pat. Appl. Publ., 20 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005065114	A1	20050324	US 2003-668665	20030923
WO 2005027936	A2	20050331	WO 2004-EP10995	20040916
WO 2005027936	A3	20050728		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,

EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-668665 A 20030923

AB A therapeutical method comprising administration of a composition comprising an amount of **oligo-β-(1,3)- glucan** and a pharmaceutically acceptable carrier, to a human being or to a warm-blood animal suffering from a disease selected from the group consisting in a **tumor**, a **cancer**, a viral disease, a bacterial disease, a fungal disease, a disease of the immune system, an auto-immune disease or a disease related to a deficiency of immunostimulation, wherein the amount of **oligo-β-(1,3)- glucan** is effective to treat the disease.

L13 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:259651 CAPLUS
DOCUMENT NUMBER: 142:291363
TITLE: **Chemotherapeutic** antineoplastic treatment
INVENTOR(S): **Yvin, Jean-Claude; Vetvicka, Vaclav**
PATENT ASSIGNEE(S): Fr.
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005065111	A1	20050324	US 2003-668661	20030923
WO 2005027938	A1	20050331	WO 2004-EP10993	20040916

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-668661 A 20030923

AB **Chemotherapeutic** method for the treatment of **cancer** comprising administration of an effective amount of an antineoplastic agent in conjunction with an effective amount of a β-1,3 glucan is disclosed.

L13 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:381660 CAPLUS
DOCUMENT NUMBER: 141:218560
TITLE: Effects of marine β-1,3 glucan on immune reactions
AUTHOR(S): **Vetvicka, Vaclav; Yvin, Jean-Claude**
CORPORATE SOURCE: Department of Pathology and Laboratory Medicine, University of Louisville, Louisville, KY, 40202, USA
SOURCE: International Immunopharmacology (2004), 4(6), 721-730
CODEN: IINMBA; ISSN: 1567-5769
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Glucans have a long history as nonspecific biol. modulators. A novel glucan-phycarine-was isolated from sporophytes of **Laminaria** digitata. Phycarine showed significant stimulation of phagocytic activity as well as potentiation of synthesis and release of IL-1, IL-6 and TNF-α. In addition, phycarine increased NK cell-mediated killing of **tumor** cells both in vitro and in vivo while acting via complement receptor type 3 (CR3) receptors.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:434382 CAPLUS
DOCUMENT NUMBER: 139:12302
TITLE: **Laminaria** polysaccharides for therapeutical treatments
INVENTOR(S): **Yvin, Jean-Claude; Vetvicka, Vaclav**

PATENT ASSIGNEE(S): Laboratoires Goeemar S.A., Fr.
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003045414	A2	20030605	WO 2002-EP13512	20021129
WO 2003045414	A3	20031016		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003119780	A1	20030626	US 2001-999202	20011130
US 6660722	B2	20031209		
CA 2468314	AA	20030605	CA 2002-2468314	20021129
EP 1448215	A2	20040825	EP 2002-787872	20021129
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
JP 2005510543	T2	20050421	JP 2003-546915	20021129

PRIORITY APPLN. INFO.: US 2001-999202 A 20011130
WO 2002-EP13512 W 20021129

AB A therapeutical method comprises administration to a patient of an effective amount of especially soluble **laminarin** for the treatment of **tumors** and more generally of **cancers** of the group comprising breast **cancer**, lung **cancer**, esophagus **cancer**, stomach **cancer**, intestine and colon **cancers**, and for the treatment of viral, bacterial and fungal diseases as well as diseases related to immunostimulant deficiencies of human beings and warm-blood animals.

L14 ANSWER 1 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:382880 CAPLUS
TITLE: **Glucan**-like synthetic **oligosaccharides**: iterative synthesis of linear **oligo**-β-(1,3)- **glucans** and immunostimulatory effects
AUTHOR(S): **Jamois, Frank**; Ferrieres, Vincent; Guegan, Jean-Paul; **Yvin, Jean-Claude**; Plusquellec, Daniel; **Vetvicka, Vaclav**
SOURCE: Glycobiology (2005), 15(5), 13G
CODEN: GLYCE3; ISSN: 0959-6658
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal; Errata
LANGUAGE: English
AB Unavailable

L14 ANSWER 2 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:245973 CAPLUS
TITLE: **Glucan**-like synthetic **oligosaccharides**: iterative synthesis of linear **oligo**-β-(1,3)- **glucans** and immunostimulatory effects
AUTHOR(S): **Jamois, Frank**; Ferrieres, Vincent; Guegan, Jean-Paul; **Yvin, Jean-Claude**; Plusquellec, Daniel; **Vetvicka, Vaclav**
CORPORATE SOURCE: Laboratoire Goemar, ZAC La Madeleine, Saint Malo, 35400, Fr.
SOURCE: Glycobiology (2005), 15(4), 393-407
CODEN: GLYCE3; ISSN: 0959-6658
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Small reducing and linear **oligo**-β-(1,3)- **glucans**, which are able to act as phytoallexin elicitors or as immunostimulating agents in anticancer therapy, were synthesized according to an iterative strategy that involved a unique key monosaccharidic donor. To avoid anomeric mixts., the reducing entity of the target oligomers was first locked with benzyl alc. and further selective deprotection of the 3-OH with DDQ afforded the desired building block as an acceptor. The latter was then used in a second cycle of glycosylation/deprotection to afford the desired disaccharide, and successive reiterations of this process provided the desired oligomers. Unusual conformational behaviors were observed by standard NMR sequences and supported by NOESY studies. Finally, removal of protecting groups afforded free tri-, tetra-, and pentaglucosides in good overall yields. Two **oligosaccharides** representing linear **laminaritetraose** and **laminaripentaose** were compared to the recently described β-(1,3)- **glucan** phycarine. Following an i.p. injection, the influx of monocytes and granulocytes into the blood and macrophages into the peritoneal cavity was comparable to that caused by phycarine. Similarly, both **oligosaccharides** stimulated phagocytic activity of granulocytes and macrophages. Using ELISA, we also demonstrated a significant stimulation of secretion of IL-1β. Together these results suggest that the synthetic **oligosaccharides** have similar stimulatory effects as natural β-(1,3)- **glucans**.
REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 3 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:1040676 CAPLUS
DOCUMENT NUMBER: 142:333027
TITLE: β-1,3 **glucan** sulfate, but not β-1,3 **glucan**, induces the salicylic acid signaling pathway in tobacco and Arabidopsis
AUTHOR(S): Menard, Rozenn; Alban, Susanne; de Ruffray, Patrice; **Jamois, Frank**; Franz, Gerhard; Fritig, Bernard; **Yvin, Jean-Claude**; Kauffmann, Serge
CORPORATE SOURCE: Institut de Biologie Moleculaire des Plantes du Centre National de la Recherche Scientifique, Universite Louis Pasteur, Strasbourg, 67084, Fr.
SOURCE: Plant Cell (2004), 16(11), 3020-3032
CODEN: PLCEEW; ISSN: 1040-4651
PUBLISHER: American Society of Plant Biologists
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Sulfate substituents naturally occurring in biomols., such as **oligosaccharides** and polysaccharides, can play a critical role in major physiol. functions in plants and animals. We show that **laminarin**, a β-1,3 **glucan** with elicitor activity in tobacco (Nicotiana tabacum), becomes, after chemical sulfation, an inducer of the salicylic acid (SA) signaling pathway in tobacco and Arabidopsis thaliana. In tobacco cell suspensions, the oxidative burst induced by the **laminarin** sulfate PS3 was Ca2+ dependent but partially kinase independent, whereas **laminarin** triggered a strickly kinase-dependent oxidative burst. Cells treated with PS3 or **laminarin** remained fully responsive to a second application of **laminarin** or PS3, resp., suggesting two distinct perception systems. In tobacco leaves, PS3, but not **laminarin**, caused electrolyte leakage and triggered scopoletin and SA accumulation. Expression of different families of Pathogenesis-Related (PR) proteins was analyzed in wild-type and mutant tobacco as well as in Arabidopsis. **Laminarin** induced expression of ethylene-dependent PR proteins, whereas PS3 triggered expression of ethylene- and SA-dependent PR proteins. In Arabidopsis, PS3-induced PR1 expression was also NPR1 (for nonexpresser of PR genes1) dependent. Structure-activity anal. revealed that (1) a min. chain length is essential for biol. activity of unsulfated as well as sulfated **laminarin**, (2) the sulfate residues are essential and cannot be replaced by other anionic groups, and (3) moderately sulfated β-1,3 **glucans** are active. In tobacco, PS3 and curdian sulfate induced immunity against Tobacco mosaic virus infection, whereas **laminarin** induced only a weak resistance. The results open new routes to work out new mols. suitable for crop protection.

REFERENCE COUNT: 66 THERE ARE 66 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 4 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:659845 CAPLUS
DOCUMENT NUMBER: 139:161069
TITLE: Use of sulfated β-1,3-glucans for stimulation of natural defense mechanisms in plants
INVENTOR(S): **Yvin, Jean Claude**; Menard, Rozenn; Kauffmann, Serge; Fritig, Bernard
PATENT ASSIGNEE(S): Laboratoires Goemar, Fr.
SOURCE: Fr. Demande, 22 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2836011	A1	20030822	FR 2002-2144	20020220
FR 2836011	B1	20040514		
EP 1338200	A1	20030827	EP 2003-290357	20030214
EP 1338200	B1	20041027		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
AT 280497	E	20041115	AT 2003-290357	20030214
PT 1338200	T	20050331	PT 2003-290357	20030214
US 2004110638	A1	20040610	US 2003-371460	20030220

PRIORITY APPLN. INFO.: FR 2002-2144 A 20020220

AB Natural defense mechanisms of agricultural crops and ornamental plants are stimulated by the application of a sulfated β-1,3-glucan, in particular, **laminarin** sulfate with sulfation degree of ≥ 1.9, preferably 2-2.5, in the concentration of at least 1 mg/L, preferably of at least 5 mg/L, more preferably of at least 10 mg/L, in the amount sufficient to provide an efficient quantity of a sulfated β-1,3-glucan, in the case of **laminarin** sulfate, from 0.4 to 4 g, per ha.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 5 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:353289 CAPLUS
DOCUMENT NUMBER: 136:359640
TITLE: Anti-inflammatory and healing medicine based on **laminarin** sulphate
INVENTOR(S): **Yvin, Jean-Claude**; Alban, Susanne; Franz, Gerhard
PATENT ASSIGNEE(S): Laboratoires Goemar S.A., Fr.

SOURCE: PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002036132	A1	20020510	WO 2001-FR3397	20011102
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
FR 2816213	A1	20020510	FR 2000-14118	20001103
FR 2816213	B1	20050422		
CA 2427744	AA	20020510	CA 2001-2427744	20011102
AU 2002023731	A5	20020515	AU 2002-23731	20011102
EP 1337261	A1	20030827	EP 2001-992577	20011102
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2004127457	A1	20040701	US 2004-415635	20040129
PRIORITY APPLN. INFO.:			FR 2000-14118 A	20001103
			WO 2001-FR3397 W	20011102

AB The invention concerns the use for preparing a medicine for treating inflammatory diseases induced by non-specific inflammatory responses, that is antigen-independent, of a **laminarin** sulfate, having a degree of sulfation not less than 1.9 and preferably between 2 and 2.5 degree of polymerization identical to that of the natural mol., that is 20 to 30. Anti-inflammatory activity of **laminarin** sulfate was shown in guinea pig ears. An oral sachet contained **laminarin** sulfate 0.150, saccharose 2.850 g, and orange flavor q.s.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 6 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:581902 CAPLUS
DOCUMENT NUMBER: 135:137673
TITLE: Method for preparing functionalised beta-(1,3)-**glucan oligosaccharides**
INVENTOR(S): **Yvin, Jean-Claude; Jamois, Frank;** Ferrieres, Vincent; Plusquellec, Daniel
PATENT ASSIGNEE(S): Laboratoires Goemar, Fr.
SOURCE: PCT Int. Appl., 60 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001057053	A1	20010809	WO 2001-FR329	20010202
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2804684	A1	20010810	FR 2000-1429	20000204
FR 2804684	B1	20020628		
CA 2399161	AA	20010809	CA 2001-2399161	20010202
EP 1252171	A1	20021030	EP 2001-904046	20010202
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003523331	T2	20030805	JP 2001-557884	20010202
US 2003045706	A1	20030306	US 2002-182976	20020801
PRIORITY APPLN. INFO.:			FR 2000-1429 A	20000204

WO 2001-FR329 W 20010202
OTHER SOURCE(S): CASREACT 135:137673; MARPAT 135:137673
AB The invention concerns a novel method for preparing by chemical process functionalized synthon β-(1,3)- **glucan** derivs. I wherein X is substituted sulfonyl; R1 is alkyl, haloalkyl, ketoalkyl, acyl; R2 is acyl; R3 and R4 are different than COR1 and R2; and are independently substituted benzyl, allyl, methylnaphthyl, chloroacetyl, trimethylsilyl, triarylsilyl; R3R4 are together ethylidenyl, isopropylidenyl, cyclopentylidenyl, cyclohexylidenyl, butylidenyl, benzylidenyl; n is 1-4; enabling to obtain free **oligosaccharides** or comprising specific groups such as, for instance, sulfate, phosphate, Me, in predetd. positions. The invention is useful for preparing biol. active principles for use in the agricultural, cosmetic or pharmaceutical field (no data). Thus, benzyl 2-O-benzoyl-4,6-O-benzylidene-β-D-glucopyranosyl-(1→3)-2-O-benzoyl-4,6-O-benzylidene-β-D-glucopyranosyl-(1→3)-2-O-benzoyl-4,6-O-benzylidene-β-D-glucopyranosyl-(1→3)-2-O-benzoyl-4,6-O-benzylidene-β-D-glucopyranoside was prepared via glycosidation reactions.
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 7 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:831890 CAPLUS
DOCUMENT NUMBER: 134:128673
TITLE: Linear β-1,3 **glucans** are elicitors of defense responses in tobacco
AUTHOR(S): Klarzynski, Olivier; Plesse, Bertrand; Joubert, Jean-Marie; **Yvin, Jean-Claude**; Kopp, Marguerite; Kloareg, Bernard; Fritig, Bernard
CORPORATE SOURCE: Institut de Biologie Moleculaire des Plantes du Centre National de la Recherche Scientifique, Universite Louis Pasteur, Strasbourg, F-67084, Fr.
SOURCE: Plant Physiology (2000), 124(3), 1027-1037
CODEN: PLPHAY; ISSN: 0032-0889
PUBLISHER: American Society of Plant Physiologists
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **Laminarin**, a linear β-1,3- **glucan** (mean d.p. of 33) was extracted and purified from the brown alga **Laminaria** digitata. Its elicitor activity on tobacco (Nicotiana tabacum) was compared to that of oligogalacturonides with a mean d.p. of 10. The two **oligosaccharides** were perceived by suspension-cultured cells as distinct chemical stimuli but triggered a similar and broad spectrum of defense responses. A dose of 200 μg mL-1 **laminarin** or oligogalacturonides induced within a few minutes a 1.9-pH-units alkalinization of the extracellular medium and a transient release of H2O2. After a few hours, a strong stimulation of phenylalanine ammonia-lyase, caffeic acid O-methyltransferase, and lipoxygenase activities occurred, as well as accumulation of salicylic acid. Neither of the two **oligosaccharides** induced tissue damage or cell death nor did they induce accumulation of the typical tobacco phytoalexin capsidiol, in contrast with the effects of the proteinaceous elicitor β-megaspermin. Structure activity studies with **laminarin**, **laminarin** oligomers, high mol. weight β-1,3-1,6- **glucans** from fungal cell walls, and the β-1,6-1,3-heptaglucan showed that the elicitor effects observed in tobacco with β- **glucans** are specific to linear β-1,3 linkages, with **laminaripentaose** being the smallest elicitor-active structure. In accordance with its strong stimulating effect on defense responses in tobacco cells, infiltration of 200 μg mL-1 **laminarin** in tobacco leaves triggered accumulation within 48 h of the four families of antimicrobial pathogenesis-related proteins investigated. Challenge of the **laminarin**-infiltrated leaves 5 d after treatment with the soft rot pathogen Erwinia carotovora subsp. carotovora resulted in a strong reduction of the infection when compared with water-treated leaves.
REFERENCE COUNT: 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 8 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:573603 CAPLUS
DOCUMENT NUMBER: 133:146284
TITLE: Increasing crop yields by stimulating pollen germination
INVENTOR(S): **Yvin, Jean Claude**; Cruz, Florence; Le Goffic, Francois; Tran Thanh, Kiem Ngoc
PATENT ASSIGNEE(S): Laboratoires Goemar S.A., Fr.

SOURCE: PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000047046	A1	20000817	WO 2000-FR370	20000215
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2789550	A1	20000818	FR 1999-1799	19990215
FR 2789550	B1	20030411		
EP 1152661	A1	20011114	EP 2000-905136	20000215
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

PRIORITY APPLN. INFO.: FR 1999-1799 A 19990215
WO 2000-FR370 W 20000215
OTHER SOURCE(S): MARPAT 133:146284

AB The invention concerns the use, in particular by foliar application, of betaine or betainoid for increasing the yield of crops by stimulating the germination of pollen grains. The betanoids are I (R1 = α-amino acid chain; R2, R3, R4 = alkyl, alkenyl, etc.; R5 = H alkyl, alkenyl, etc.; R1R2 or R2R3 = alkylene). Preparation of L-phenylalaninebetaine is given. L-Phenylalaninebetaine can also be extracted from **Laminaria** digitata.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 9 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:28639 CAPLUS
DOCUMENT NUMBER: 133:16812
TITLE: Algal oligosaccharides as functional foods: in vitro study of their cellular and fermentative effects
AUTHOR(S): Michel, Catherine; Benard, Claudine; Lahaye, Marc; Formaglio, Damien; Kaeffer, Bertrand; Quemener, Bernard; Berot, Serge; **Yvin, Jean-Claude**; Blottiere, Herve M.; Cherbut, Christine; Blassel, Christian; Blat, Sophie; Bonnet, Christian; Coutret, Jocelyne; David, Agnes; Doulay, Frank; Kozlowski, Francoise; Rival, Martine; Yu, Yan-Qian
CORPORATE SOURCE: Centre de recherche en nutrition humaine, Unite fonctions digestives et de nutrition humaine, Institut national de la recherche agronomique, Nantes, 44316, Fr.
SOURCE: Sciences des Aliments (1999), 19(3/4), 311-332
CODEN: SCALDC; ISSN: 0240-8813
PUBLISHER: Lavoisier Abonnements
DOCUMENT TYPE: Journal
LANGUAGE: French

AB Algal polysaccharides are indigestible and exhibit unusual biochem. and fermentative characteristics from which stem interesting biol. effects such as antitumoral, immunostimulating and/or prebiotic effects. In this study, the authors aimed to determine whether oligosaccharides obtained from alginates and **laminarans** also have such biol. activities and can thus be considered as functional foods. The chemical structures of the oligosaccharides were determined using NMR. Both the fermentation and the effects on microbial populations of oligo-alginates and oligo-**laminarans** were investigated using batch incubations with, and continuous culture of, human faecal bacteria. The kinetic and intensity of fermentation were measured by continuous monitoring of gas production and determination of final pH value, resp. Effects on intestinal flora activity and composition were determined via metabolite quantification and main bacterial genera enumeration. Cytotoxic, proliferative and differentiating effects were estimated after exposure of epithelial (Caco-2), monocytic (THP1) and lymphocytic T (Jurkat) cell lines. Despite very different biochem. structures, the two oligo-alginates exhibited similar fermentation patterns. As with native alginates, they required adaptation prior to their metabolism However, this

adaptation did not result in any change in the global bacterial composition No noticeable biol. effect was detected for oligo-alginates. In contrast to native **laminarans**, oligo-**laminarans** did not require adaptation prior to their fermentation Propionate production was stimulated but not significant modification of the balance between the main bacterial genera was observed during continuous culture of human fecal flora. Oligo-**laminarans** exhibited slightly inhibitory effects on Caco-2 cells, inhibited mononuclear cell proliferation and stimulated the expression of ICAM-1 monocytic cells. This last property appears promising, and may allow algal oligosides to be used as functional foods and/or components.

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 10 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:791219 CAPLUS
DOCUMENT NUMBER: 132:1683
TITLE: Enzymes immobilized on a metal oxide based support, preparation methods, and application
INVENTOR(S): Duval, Raphael; **Yvin, Jean Claude**
PATENT ASSIGNEE(S): Societe Civile Ase et Bio, Fr.
SOURCE: Fr. Demande, 26 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2773172	A1	19990702	FR 1997-16800	19971231
FR 2773172	B1	20001013		
WO 9935251	A1	19990715	WO 1998-FR2903	19981229
W: AU, CA, JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9919721	A1	19990726	AU 1999-19721	19981229

PRIORITY APPLN. INFO.: FR 1997-16800 A 19971231
WO 1998-FR2903 W 19981229

AB The invention concerns the immobilization of glucosidases, e.g. β-1,3-glucanase, proteases, or lipases via covalent bonds to the bi-or polyfunctionalized phosphate or poly-phosphate groups bound to a solid metal oxide surface. Prefered metal oxides are zirconium oxide, titanium dioxide, and silica, and alumina. The functionalized phosphate group is of the general formula: (MO)PO(OX)(OY), where X = hydrogen or alkali metal; M = phosphate or polyphosphate (n = 1-105); Y = reactive group, e.g. amine, carboxylic acid, alc., thiol, aldehyde, ester, linear or branched C1-C40, also heteroatom containing The immobilized enzymes are used in enzyme reactors. Thus 2-aminoethyl phosphonic acid was stirred with titanium dioxide at pH 4.5 at 20-25 °C. The competition of the coupling reaction was checked with ninhydrin reaction. The functionalized titanium dioxide was filtered, washed and treated with glutar aldehyde. After filtration, β-1,3-glucanase was immobilized. The prepared immobilized enzyme was used in an enzyme reactor to produce DP2 - DP6 **oligo**-β-1,3-glucanes form β-1,3- **glucan**

L14 ANSWER 11 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:791218 CAPLUS
DOCUMENT NUMBER: 132:1682
TITLE: Enzymes immobilized on a metal oxide based support, preparation methods, and application
INVENTOR(S): Duval, Raphael; **Yvin, Jean Claude**
PATENT ASSIGNEE(S): Societe Civile Ase et Bio, Fr.
SOURCE: Fr. Demande, 26 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2773171	A1	19990702	FR 1997-16799	19971231
FR 2773171	B1	20001013		
WO 9935249	A1	19990715	WO 1998-FR2901	19981229
W: AU, CA, JP, US				

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

AU 9919719	A1	19990726	AU 1999-19719		19981229
PRIORITY APPLN. INFO.:			FR 1997-16799	A	19971231
			WO 1998-FR2901	W	19981229

AB The invention concerns the immobilization of glucosidases, e.g. β-1,3-glucanase, or lipases via covalent bonds to the bi-or polyfunctionalized phosphate or poly-phosphate groups bound to a solid metal oxide surface. Prefered metal oxides are zirconium oxide, titanium dioxide, and silica, but not alumina. The functionalized phosphate group is of the general formula: (MO)PO(OX)(OY), where X = hydrogen or alkali metal; M = phosphate or polyphosphate (n = 1-105); Y = reactive group, e.g. amine, carboxylic acid, alc., thiol, aldehyde, ester, linear or branched C1-C40, also heteroatom containing The immobilized enzymes are used in enzyme reactors. Thus thiamine phosphate was stirred with titanium dioxide at pH 4.5 at 20-25 °C. The competition of the coupling reaction was checked with ninhydrin reaction. The functionalized titanium dioxide was filtered, washed and treated with glutar aldehyde. After filtration, β-1,3-glucanase was immobilized. The prepared immobilized enzyme was used in an enzyme reactor to produce DP2 - DP6 **oligo** -β-1,3-glucanes form β-1,3- **glucan.**

L14 ANSWER 12 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:791217 CAPLUS
DOCUMENT NUMBER: 132:1681
TITLE: Enzymes immobilized on an alumina-based support, preparation methods, and application
INVENTOR(S): Duval, Raphael; **Yvin, Jean Claude**
PATENT ASSIGNEE(S): Societe Civile Ase et Bio, Fr.
SOURCE: Fr. Demande, 26 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2773170	A1	19990702	FR 1997-16798	19971231
FR 2773170	B1	20001013		
WO 9935250	A1	19990715	WO 1998-FR2902	19981229

W: AU, CA, JP, US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

AU 9919720	A1	19990726	AU 1999-19720		19981229
PRIORITY APPLN. INFO.:			FR 1997-16798	A	19971231
			WO 1998-FR2902	W	19981229

AB The invention concerns the immobilization of glucosidases, e.g. β-1,3-glucanase, or lipases via covalent bonds to the bi-or polyfunctionalized phosphate or poly-phosphate groups bound to a solid alumina surface. The functionalized phosphate group is of the general formula: (MO)PO(OX)(OY), where X = hydrogen or alkali metal; M = phosphate or polyphosphate (n = 1-105); Y = reactive group, e.g. amine, carboxylic acid, alc., thiol, aldehyde, ester, linear or branched C1-C40, also heteroatom containing The immobilized enzymes are used in enzyme reactors. Thus 2-aminoethyl-dihydrogenphosphate was stirred with alumina at pH 4.5 at 20-25 °C. The competition of the coupling reaction was checked with ninhydrin reaction. The functionalized alumina was filtered, washed and used for immobilizing β-1,3-glucanase at pH 4.5. The prepared immobilized enzyme was used in an enzyme reactor to produce DP2 - DP6 **oligo**-β-1,3-glucanes form β-1,3- **glucan.**

L14 ANSWER 13 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:672831 CAPLUS
DOCUMENT NUMBER: 131:272133
TITLE: Preparation of **laminaribiose** via coupling reaction
INVENTOR(S): **Yvin, Jean-Claude; Jamois, Frank;** Ferrieres, Vincent; Plusquellec, Daniel
PATENT ASSIGNEE(S): Laboratoires Goemar, Fr.
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9952920	A1	19991021	WO 1999-FR857	19990413
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2777281	A1	19991015	FR 1998-4610	19980414
FR 2777281	B1	20000630		
CA 2328289	AA	19991021	CA 1999-2328289	19990413
AU 9934248	A1	19991101	AU 1999-34248	19990413
EP 1071692	A1	20010131	EP 1999-915798	19990413
EP 1071692	B1	20020731		
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE, PT, FI				
JP 2002511478	T2	20020416	JP 2000-543476	19990413
AT 221540	E	20020815	AT 1999-915798	19990413
PT 1071692	T	20021129	PT 1999-915798	19990413
ES 2181414	T3	20030216	ES 1999-915798	19990413
US 6632940	B1	20031014	US 2000-673295	20001013
PRIORITY APPLN. INFO.:			FR 1998-4610 A	19980414
			WO 1999-FR857 W	19990413

OTHER SOURCE(S): CASREACT 131:272133; MARPAT 131:272133

AB The invention concerns a method for preparing **Laminaribiose** comprising a step for glycoside coupling between a donor and an acceptor of glycosyl. The invention is characterized in that the glycosyl donor is in pyranose form I [R2 = alkyl, aryl; X = S(O)nR; R = alkyl, aryl; n = 0, 1] and the glycosyl acceptor is in furanose form II (R2, R3 = Me, Et, trichloroethyl, iso-Pr, hexafluoroisopropyl, cyclopentyl, cyclohexyl, cycloheptyl Bu, 1-tert-isobutylethyl, 1-phenylethyl, benzyl, methoxybenzyl, 1-phenylbenzyl; R4, R5 = Me, Et, trichloroethyl, i-Pr, hexafluoroisopropyl, cyclopentyl, cyclohexyl, cycloheptyl, Bu, 1-tert-isobutylethyl, 1-phenylethyl, benzyl; methoxybenzyl, 1-phenylbenzyl , independently benzyl, acetyl, benzoyl, chlorobenzoyl, methoxybenzoyl, nitrobenzoyl, allyl, chlorobenzyl, methoxybenzyl, nitrobenzyl), said coupling step is performed in solution in an anhydrous organic solvent, at a temperature ranging between -80 >C and 40 >C, for a time interval ranging between 1 min and 8 h, in the presence of a suitable promoter. Thus, **laminaribiose** was prepared and characterized as its acetyl derivative

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 14 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:511030 CAPLUS
DOCUMENT NUMBER: 131:161631
TITLE: Medicine for treating apoptosis dysfunction containing **oligosaccharides**
INVENTOR(S): **Yvin, Jean-claude**; Cruz, Florence; Descamps, Valerie; Richard, Christophe; Thibal, Vesna; Arrigo, Patrick; Cloarec, Bernard
PATENT ASSIGNEE(S): Laboratoires Goemar S.A., Fr.
SOURCE: PCT Int. Appl., 42 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9939718	A1	19990812	WO 1999-FR229	19990203
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2774289	A1	19990806	FR 1998-1237	19980203

FR 2774289	B1	20020524			
CA 2319677	AA	19990812	CA 1999-2319677		19990203
AU 9921710	A1	19990823	AU 1999-21710		19990203
EP 1052996	A1	20001122	EP 1999-901702		19990203
EP 1052996	B1	20040728			
R: DE, ES, FR, GB, GR, IT, NL, PT					
JP 2002502887	T2	20020129	JP 2000-530215		19990203
PT 1052996	T	20041130	PT 1999-901702		19990203
ES 2226331	T3	20050316	ES 1999-901702		19990203
US 6750208	B1	20040615	US 2000-601665		20001228
PRIORITY APPLN. INFO.:			FR 1998-1237	A	19980203
			WO 1999-FR229	W	19990203

AB The invention concerns a medicine comprising, as active principle, an efficient quantity of at least an **oligosaccharide** substance capable of modulating apoptosis dysfunction and optionally comprising, on at least some of its unit motifs, at least a substituent of the group comprising sulfate, Me and acetyl groups, the substance being selected from the group comprising: **oligosaccharides** derived by enzymic or chemical process from polymer groups including β 1-3 **glucans** optionally comprising β 1-6 branches; and **oligosaccharides** derived by enzymic or chemical process from sulfated galactans, in particular carrageenan, agar and porphyrins. Iotacarrageenan was incubated with iotacarrageenase at 45-50° and the hydrolyzed products was ultrafiltered. The efficacy of the above product in prevention of apoptosis induced by Fas ligand or anti-Fas receptor antibody was shown.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 15 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:77449 CAPLUS
DOCUMENT NUMBER: 130:149861
TITLE: Stimulation of natural plant defenses by **oligo** -β-1-3- **glucans**
INVENTOR(S): **Yvin, Jean-Claude**; Cruz, Florence; Joubert, Jean-Marie; Cloarec, Bernard; Richard, Christophe; Plesse, Bertrand; Kopp, Marguerite; Fritig, Bernard
PATENT ASSIGNEE(S): Laboratoires Goemar S.A., Fr.
SOURCE: PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9903346	A1	19990128	WO 1998-FR1590	19980720
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2766059	A1	19990122	FR 1997-9168	19970718
FR 2766059	B1	19990917		
CA 2296752	AA	19990128	CA 1998-2296752	19980720
AU 9888135	A1	19990210	AU 1998-88135	19980720
EP 1001678	A1	20000524	EP 1998-939722	19980720
EP 1001678	B1	20030409		
R: DE, ES, FR, GB, GR, IT, NL, PT				
PT 1001678	T	20030829	PT 1998-939722	19980720
ES 2197496	T3	20040101	ES 1998-939722	19980720
US 6387847	B1	20020514	US 2000-463065	20000118
PRIORITY APPLN. INFO.:			FR 1997-9168 A	19970718
			WO 1998-FR1590 W	19980720

AB The invention concerns a method for potentiating and stimulating the natural control system of agriculturally useful plants, using a phytosanitary composition containing one or several **oligo**-β-1-3-**glucans** consisting of 3 to 250, preferably, 3 to 50, and more preferably 3 to 30 carbohydrate units. The **oligo**-β-1-3-**glucan** concentration and the use of this composition being selected such that it brings per cultivated ha an amount of **oligo**-β-1-3-**glucans** less than the amount which directly induces the natural defense reactions, the amount ranging in practice from 1 to 200 g,

preferably 4 to 80 g per ha in the case of cereals and in particular of wheat. The **oligo-β-1-3- glucans** are extracted from Alcaligenes faecalis or **Laminaria** digitata. **Oligo -β-1-3- glucans** stimulated wheat defenses against Septoria tritici.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 16 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:700796 CAPLUS
DOCUMENT NUMBER: 130:34862
TITLE: Purification and determination of the action pattern of Haliotis tuberculata **laminarinase**
AUTHOR(S): Lepagnol-Descamps, Valerie; Richard, Christophe; Lahaye, Marc; Potin, Philippe; **Yvin, Jean-Claude**; Kloareg, Bernard
CORPORATE SOURCE: Centre d'Etudes d'Oceanographie et de Biologie Marine (CEOBM-CNRS UPR 9042), Roscof, F-29682, Fr.
SOURCE: Carbohydrate Research (1998), 310(4), 283-289
CODEN: CRBRAT; ISSN: 0008-6215
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The major **laminarinase** (EC 3.2.1.39) (I) from the gastropodean marine mollusk, H. tuberculata, was purified to homogeneity by cation-exchange chromatog. and its action pattern was investigated by HPAEC-PAD anal. of the degradation of various **laminarin** samples. I consisted of a 60-kDa protein capable of depolymg. the unbranched portions of β-(1→3)-β-(1→6)-glucan to **laminaritriose**. I operated via a mol. mechanism retaining the anomeric configuration. Since purified I did not cleave the β-(1→6)-linkages, it could be used for the structural anal. of **laminarins**.

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 17 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:635620 CAPLUS
DOCUMENT NUMBER: 129:256467
TITLE: Composition and method for stimulating pollen germination
INVENTOR(S): **Yvin, Jean-Claude**; Levasseur, Florence; Tran, Thanh Kiem-Ngoc; Le Bui, Van
PATENT ASSIGNEE(S): Laboratoires Goemar S.A., Fr.; Tran Thanh, Kiem-Ngoc
SOURCE: PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9841091	A1	19980924	WO 1998-FR555	19980319
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
FR 2761058	A1	19980925	FR 1997-3386	19970319
FR 2761058	B1	19990521		
CA 2283710	AA	19980924	CA 1998-2283710	19980319
AU 9869255	A1	19981012	AU 1998-69255	19980319
EP 971586	A1	20000119	EP 1998-914952	19980319
R: DE, ES, FR, GB, GR, IT, NL, PT				
JP 2001516355	T2	20010925	JP 1998-540211	19980319
US 6303587	B1	20011016	US 1999-381569	19991227

PRIORITY APPLN. INFO.: FR 1997-3386 A 19970319
WO 1998-FR555 W 19980319

AB The invention concerns a composition, preferably for foliar application, standard formulation ingredients and an active substance consisting of a least a plant protectant capable of stimulating pollen germination, which is an oligosaccharide with a degree of polymerization ≤10 and comprising

≤10, preferably ≤5 and, more preferably, 2 carbohydrate units bound by β1-3, β1-4, and α1-3 bonds, particularly **laminaribiose**, cellobiose, nigerose, **laminaritriose**, **laminaritetraose**, and **laminaripentaose**. Also active are; the derivs. of the above oligosaccharides substituted on the free anomeric carbon atom or on the whole set of carbons bearing a free hydroxide by a radical selected in the group comprising: C1-5 alkyl, preferably Me radical; C1-5 acyl, preferably acetyl; aryl, preferably of the pyridylamino type; cycloalkyls; amines; N-acetyl radical; and sulfate and phosphate radicals. Preparation of some of the active substances by hydrolysis, is given.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 18 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:95090 CAPLUS
DOCUMENT NUMBER: 124:126891
TITLE: Cosmetics containing **laminarin** and oligosaccharides derived therefrom for treatment of skin
INVENTOR(S): **Yvin, Jean-Claude**; Levasseur, Florence; Hud'homme, Fabienne
PATENT ASSIGNEE(S): Laboratoires Goemar S.A., Fr.
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9531177	A1	19951123	WO 1995-FR618	19950511
W: JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
FR 2719772	A1	19951117	FR 1994-5795	19940511
FR 2719772	B1	19960802		
EP 759740	A1	19970305	EP 1995-920137	19950511
EP 759740	B1	20010808		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 10500126	T2	19980106	JP 1995-529413	19950511
AT 203894	E	20010815	AT 1995-920137	19950511
ES 2161888	T3	20011216	ES 1995-920137	19950511
PT 759740	T	20020130	PT 1995-920137	19950511
US 5980916	A	19991109	US 1996-737134	19961107
GR 3037066	T3	20020131	GR 2001-401938	20011030
PRIORITY APPLN. INFO.:			FR 1994-5795 A	19940511
			WO 1995-FR618 W	19950511

AB A cosmetic or pharmaceutical compns. containing an effective amount of **laminarin** or **laminarin**-derived oligosaccharides as the active ingredient are disclosed. These compns. have stimulating, regenerating conditioning and energizing effects on human dermis fibroblasts and human epidermis keratinocytes. **Laminarin** was extracted from brown alga and its stimulating effect on cultured human dermis fibroblast was shown. An ointment contained paraffin oil 95.1, polyoxyethylene sorbitan trioleate 2.5, calendula extract 1.0, Melaleuca alternifolia essential oil 0.5, **laminarin** 0.5, and preservative 0.4%.

L14 ANSWER 19 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:778753 CAPLUS
DOCUMENT NUMBER: 123:281009
TITLE: Free or silica-bound oligokappa-carrageenans elicit **laminarinase** activity in Rubus cells and protoplasts
AUTHOR(S): Patier, Pascale; Potin, Philippe; Rochas, Cyrille; Kloareg, Bernard; **Yvin, Jean-Claude**; Lienart, Yvette
CORPORATE SOURCE: Centre de Recherches sur les Macromolecules Vegetales - C.N.R.S., Associe a l'Universite Joseph Fourier de Grenoble, BP 53X, Grenoble, 38041, Fr.
SOURCE: Plant Science (Shannon, Ireland) (1995), 110(1), 27-35
CODEN: PLSCE4; ISSN: 0168-9452
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Oligo-κ-carrageenans prepared by enzymic hydrolysis of κ-carrageenan elicited **laminarinase** (1,3-β-D-**glucan** hydrolase) activity in Rubus fruticosus cells. **Laminarinase** activation was investigated as a function of the incubation time and of the elicitor dose and structure. The response to the presence of elicitors was rapid, within 1 h of incubation, and bell-shaped dose-response curves were typically observed for the different elicitors. The hexasaccharide from κ-carrageenan, κ-neocarrahexaose sulfate, proved the most effective in inducing **laminarinase**, up to 4-fold the activity of control cells. The comparative behavior of Rubus cells and protoplasts upon incubation in the presence of either free or silica-bound κ-neocarrahexaose sulfate is consistent with the involvement of the plasma membrane in signal perception and initiation of biol. responses.

L14 ANSWER 20 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1994:127801 CAPLUS
DOCUMENT NUMBER: 120:127801
TITLE: **Laminarin** as a seed germination and plant growth accelerator.
INVENTOR(S): **Yvin, Jean Claude**; Levasseur, Florence; Amin-Gendy, Cyrille; Tran Thanh Kiem Ngoe; Patier, Pascale; Rochas, Cyrille; Lienart, Yvette; Cloarec, Bernard
PATENT ASSIGNEE(S): Laboratoires Goemar S.A., Fr.
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9400993	A1	19940120	WO 1993-FR698	19930706
W: AU, BG, BR, BY, CA, CZ, FI, HU, JP, KP, KR, KZ, LK, MN, NO, PL, RO, RU, SK, UA, US, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
FR 2693454	A1	19940114	FR 1992-8387	19920707
FR 2693454	B1	19941007		
AU 9345058	A1	19940131	AU 1993-45058	19930706
EP 649279	A1	19950426	EP 1993-914822	19930706
EP 649279	B1	19970402		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 07508529	T2	19950921	JP 1994-503039	19930706
AT 150936	E	19970415	AT 1993-914822	19930706
ES 2102659	T3	19970801	ES 1993-914822	19930706
US 5750472	A	19980512	US 1995-367130	19950314
PRIORITY APPLN. INFO.:			FR 1992-8387 A	19920707
			WO 1993-FR698 A	19930706

AB **Laminarin**, extract from algae, is a seed germination and plant growth accelerator. **Laminarin** (0.6 μg/mL) enhanced the germination of lettuce.

L14 ANSWER 21 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1994:7638 CAPLUS
DOCUMENT NUMBER: 120:7638
TITLE: Seaweed liquid fertilizer from Ascophyllum nodosum contains elicitors of plant D-glycanases
AUTHOR(S): Patier, Pascale; **Yvin, Jean Claude**; Kloareg, Bernard; Lienart, Yvette; Rochas, Cyrille
CORPORATE SOURCE: Cent. Rech. Macromol. Veg., Univ. Joseph Fourier Grenoble, Grenoble, 38041, Fr.
SOURCE: Journal of Applied Phycology (1993), 5(3), 343-9
CODEN: JAPPEL; ISSN: 0921-8971
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The structure of the major component contained in a liquid seaweed extract prepared from Ascophyllum nodosum (Phaeophyta, Fucales) was investigated. The extract was fractionated by gel permeation chromatog., and the various fractions were analyzed by GLC, HPLC, 13C NMR spectroscopy and mass spectrometry. All fractions were derivs. of the branched β-D-(1→3) glucan known as **laminaran**. They were capable of eliciting D-glycanase activities (**laminaranase**, α-amylase) in Rubus fruticosus suspended-cell cultures.

L17 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:589602 CAPLUS
DOCUMENT NUMBER: 131:309652
TITLE: β- **Glucan**, a "specific" biologic response modifier that uses antibodies to target **tumors** for cytotoxic recognition by leukocyte complement receptor type 3 (CD11b/CD18)
AUTHOR(S): Yan, Jun; **Vetvicka, Vaclav**; Xia, Yu; Coxon, Angela; Carroll, Michael C.; Mayadas, Tanya N.; Ross, Gordon D.
CORPORATE SOURCE: Division of Experimental Immunology and Immunopathology, Department of Pathology, University of Louisville, Louisville, KY, 40292, USA
SOURCE: Journal of Immunology (1999), 163(6), 3045-3052
CODEN: JOIMA3; ISSN: 0022-1767
PUBLISHER: American Association of Immunologists
DOCUMENT TYPE: Journal
LANGUAGE: English
AB β- **Glucans** were identified 36 yr ago as a biol. response modifier that stimulated **tumor** rejection. In vitro studies have shown that β- **glucans** bind to a lectin domain within complement receptor type 3 (CR3; known also as Mac-1, CD11b/CD18, or αMβ2-integrin, that functions as an adhesion mol. and a receptor for factor I-cleaved C3b, i.e., iC3b) resulting in the priming of this iC3b receptor for cytotoxicity of iC3b-opsonized target cells. This investigation explored mechanisms of **tumor** therapy with soluble β- **glucan** in mice. Normal mouse sera were shown to contain low levels of Abs reactive with syngeneic or allogeneic **tumor** lines that activated complement, depositing C3 onto **tumors**. Implanted **tumors** became coated with IgM, IgG, and C3, and the absent C3 deposition on **tumors** in SCID mice was reconstituted with IgM or IgG isolated from normal sera. Therapy of mice with **glucan**- or mannan-rich soluble polysaccharides exhibiting high affinity for CR3 caused a 57-90% reduction in **tumor** weight In young mice with lower levels of **tumor**-reactive Abs, the effectiveness of β- **glucan** was enhanced by administration of a **tumor**-specific mAb, and in SCID mice, an absent response to β- **glucan** was reconstituted with normal IgM or IgG. The requirement for C3 on **tumors** and CR3 on leukocytes was highlighted by therapy failures in C3- or CR3-deficient mice. Thus, the tumoricidal function of CR3-binding polysaccharides such as β- **glucan** in vivo is defined by natural and elicited Abs that direct iC3b deposition onto neoplastic cells, making them targets for circulating leukocytes bearing polysaccharide-primed CR3. Therapy fails when **tumors** lack iC3b, but can be restored by **tumor**-specific Abs that deposit iC3b onto the **tumors**.
REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:360183 CAPLUS
DOCUMENT NUMBER: 131:183492
TITLE: Therapeutic intervention with complement and β- **glucan** in **cancer**
AUTHOR(S): Ross, Gordon D.; **Vetvicka, Vaclav**; Yan, Jun; Xia, Yu; Vetvickova, Jana
CORPORATE SOURCE: Department of Microbiology and Immunology, Department of Pathology, Division of Experimental Immunology and Immunopathology, University of Louisville, Louisville, KY, USA
SOURCE: Immunopharmacology (1999), 42(1-3), 61-74
CODEN: IMMUDP; ISSN: 0162-3109
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review and discussion with many refs. Complement (C) has two major effector systems available for host defense. The membrane attack complex (MAC) generated from components C5-C9 can form membrane-penetrating lesions that lead to cell death by causing a rapid loss of cytoplasmic components. The MAC is only effective against pathogens with outer phospholipid membranes, and cannot kill Gram-pos. bacteria or yeast whose membranes are protected by cell walls. The most important effector mechanism of C is the opsonization of microbial pathogens with the serum protein C3 that leads to their high avidity attachment to the C3-receptors of phagocytic cells. Pathogens that activate complement are first coated

with the C3b fragment of C3, which is rapidly proteolyzed into the iC3b fragment by serum factor I. These iC3b fragments serve to promote the high avidity attachment of the 'iC3b-opsonized' pathogens to the iC3b-receptors (CR3, CD11b/CD18) of phagocytic cells and natural killer (NK) cells, stimulating phagocytosis and/or cytotoxic degranulation. Host cells, including neoplastic **tumor** cells, have been endowed with natural mechanisms for self-protection against both the MAC and the cytotoxic activation of CR3. This review discusses a novel type of immunotherapy for **cancer** that uses soluble yeast β-**glucan** to override the normal resistance of iC3b-opsonized **tumor** cells to the cytotoxic activation of phagocyte and NK cell CR3, allowing this important effector mechanism of the C system to function against **tumor** cells in the same way that it normally functions against bacteria and yeast. Moreover, the cytotoxic activation of β- **glucan**-primed NK cell CR3 by iC3b-opsonized **tumors** is shown to be accompanied by a **tumor**-localized secretion of the cytokines TNFα, IFNα, IFNγ, and IL-6.

REFERENCE COUNT: 116 THERE ARE 116 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:154439 CAPLUS
DOCUMENT NUMBER: 131:4028
TITLE: Regulation of CR3 (CD11b/CD18)-dependent natural killer (NK) cell cytotoxicity by **tumor** target cell MHC class I molecules
AUTHOR(S): **Vetvicka, V.**; Hanikyrova, M.; Vetvickova, J.; Ross, G. D.
CORPORATE SOURCE: Division of Experimental Immunology and Immunopathology, Department of Pathology, University of Louisville, Louisville, KY, 40292, USA
SOURCE: Clinical and Experimental Immunology (1999), 115(2), 229-235
CODEN: CEXIAL; ISSN: 0009-9104
PUBLISHER: Blackwell Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Phagocyte and NK cell CR3 functions as both an adhesion mol. and an iC3b receptor mediating cytotoxic responses to microorganisms. Cytotoxic activation of iC3b receptor function requires ligation of both a CD11b I-domain site for iC3b and a lectin site located in the C-terminus of CD11b. Because **tumors** lack the CR3-binding polysaccharides of bacteria and fungi, iC3b-opsonized **tumors** do not stimulate CR3-dependent cytotoxicity. Previous studies showed that NK cells could be induced to kill iC3b-opsonized **tumors** with small soluble β-**glucans** that bound with high affinity to CR3, bypassing the absence of similar polysaccharides on **tumor** membranes. Because CR3 signalling requires several tyrosine phosphorylation events, it appeared possible that CR3-dependent killing of autologous **tumor** cells might be suppressed by NK cell inhibitory receptors for MHC class I (KIR and CD94/NKG2) whose action involves recruitment of SHP-1 and SHP-2 tyrosine phosphatases. In the current study, Epstein-Barr virus (EBV)-transformed B cells were used as targets following opsonization with iC3b. Soluble β- **glucan** primed CR3 for killing of iC3b-coated B cells, but autologous class I-bearing targets were 84% more resistant than class I-deficient Daudi cells. Blockade of target cell class I with a MoAb specific for a domain recognized by both KIR and CD94/NKG2 resulted in comparable killing of class I+ B cells. By contrast, another MoAb to class II had no effect on cytotoxicity. These data suggest that NK cell recognition of class I suppresses CR3/tyrosine kinase-dependent cytotoxicity in the same way as it suppresses cytotoxicity mediated by other tyrosine kinase-linked receptors such as FcγRIIIA (CD16).
REFERENCE COUNT: 56 THERE ARE 56 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:448273 CAPLUS
DOCUMENT NUMBER: 127:204305
TITLE: Targeting of natural killer cells to mammary carcinoma via naturally occurring **tumor** cell-bound iC3b and β- **glucan**-primed CR3 (CD11b/CD18)
AUTHOR(S): **Vetvicka, Vaclav**; Thornton, Brian P.; Wieman, T. Jeffery; Ross, Gordon D.
CORPORATE SOURCE: Division of Experimental Immunology and

Immunopathology, Dep. of Pathology and Division of Surgical Oncology, Dep. of Surgery, University of Louisville, Louisville, KY, 40292, USA
SOURCE: Journal of Immunology (1997), 159(2), 599-605
CODEN: JOIMA3; ISSN: 0022-1767
PUBLISHER: American Association of Immunologists
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Previous reports have suggested that malignant cells frequently generate a humoral immune response that is ineffective in **tumor** destruction. Despite coating **tumors** with IgM and IgG that activate the C system via the classical pathway, normal membrane regulators of C (e.g., membrane cofactor protein and CD59) prevent cytotoxicity. Moreover, C3 deposition on **tumors** does not result in cytotoxic recognition by phagocytes or NK cells bearing C3 receptors capable of mediating destruction of C3-opsonized bacteria or yeast. The current investigation showed that freshly excised mammary **tumors** bore IgM, IgG, and C3 detectable by flow cytometry. Normal sera contained natural IgM and IgG Abs reactive with breast **tumor** cell lines, and IgG Ab titers were increased in patients with breast **cancer**. Breast **tumor** cell lines incubated in normal serum from AB+ individuals activated the classical, but not the alternative, pathway of C and became coated with C3. Despite exhibiting membrane-bound C3, serum-opsonized breast **tumor** cell lines were not killed by CR3 (CD11b/CD18)-bearing NK cells. Priming of NK cell CR3 with small soluble yeast β- **glucan** polysaccharides enabled CR3-dependent killing of these same C3-bearing **tumor** cell lines. Tests of mammary carcinoma cells from freshly excised **tumors** demonstrated that they also bore sufficient amts. of opsonic C3 for cytotoxic recognition by NK cells bearing polysaccharide-primed CR3, whereas they were largely resistant to NK cells bearing unprimed CR3. This study demonstrates the potential utility of using naturally occurring opsonic C3 on **tumor** cells for specific immunotherapeutic targeting by NK cells and phagocytes bearing polysaccharide-primed CR3.

REFERENCE COUNT: 69 THERE ARE 69 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:411328 CAPLUS
DOCUMENT NUMBER: 125:84170
TITLE: Soluble β- **glucan** polysaccharide binding to the lectin site of neutrophil or natural killer cell complement receptor type 3 (CD11b/CD18) generates a primed state of the receptor capable of mediating cytotoxicity of iC3b-opsonized target cells
AUTHOR(S): **Vetvicka, Vaclav**; Thornton, Brian P.; Ross, Gordon D.
CORPORATE SOURCE: Department Pathology, University Louisville, Louisville, KY, 40292, USA
SOURCE: Journal of Clinical Investigation (1996), 98(1), 50-61
CODEN: JCINAO; ISSN: 0021-9738
PUBLISHER: Rockefeller University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB When phagocyte CR3 binds to iC3b on bacteria or yeast, phagocytosis and degranulation are triggered because of simultaneous recognition of iC3b via a CD11b I-domain binding site and specific microbial polysaccharides via a lectin site located C-terminal to the I-domain. By contrast, when phagocyte or natural killer (NK) cell CR3 adheres to iC3b on erythrocytes or **tumor** cells that lack CR3-binding membrane polysaccharides, neither lysis nor cytotoxicity are stimulated. This investigation showed that soluble CR3-specific polysaccharides such as β- **glucan** induced a primed state of CR3 that could trigger killing of iC3b-target cells that were otherwise resistant to cytotoxicity. Anti-CR3 added before sugars prevented priming, whereas anti-CR3 added after sugars blocked primed CR3 attachment to iC3b-targets. Polysaccharide priming required tyrosine kinase(s) and a magnesium-dependent conformational change of the I-domain that exposed the CBRM1/5 activation epitope. Unlike LPS or cytokines, polysaccharides did not up-regulate neutrophil CR3 expression nor expose the mAb 24 reporter epitope representing the high affinity ICAM-1-binding state. The current data apparently explain the mechanism of tumoricidal β- **glucans** used for immunotherapy. These polysaccharides function through binding to phagocyte or NK cell CR3, priming the receptor for cytotoxicity of neoplastic tissues that are frequently targeted with iC3b and sparing normal tissues that lack iC3b.